

**MEMORANDUM**

To: Mr. Travis Blake  
NC Building Company, Inc.

From: Kevin Dean, P.E.  
Kimley-Horn and Associates, Inc,

Date: May 19, 2021

Subject: Herndon Farm – Chatham County, NC – Alternative Site Access Traffic Addendum



Kimley-Horn has performed an update to the *Herndon Farm TIA* (Kimley-Horn, July 2020) to evaluate the impact of alternative project access. The original TIA assumed that the development was served via two right-in/right-out driveways on US 15/501 and a full-movement driveway on Vickers Road, while this addendum studied the site without the Vickers Road access in place. A consistent build-out year of 2025 was studied in both analyses.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the proposed development in the 2025 study year. A limited study area was considered in this addendum analysis as the impacts of the alternative access configuration will not impact most offsite intersections.

**Existing and Background Traffic**

Projected (2025) background traffic volumes for the AM and PM peak hour traffic volumes were obtained from the original TIA and were not modified for this analysis.

**Trip Generation**

The trip generation potential of the development for this assessment was determined using the traffic generation data published in the *ITE Trip Generation Handbook* (Institute of Transportation Engineers, Tenth Edition, 2017) and was consistent with approved methodology for the original TIA. The trip generation for the current development plan is summarized in Table 1.

| Land Use Code                       | Land Use                        | Intensity |      | Daily        | AM Peak Hour |            | PM Peak Hour |           |
|-------------------------------------|---------------------------------|-----------|------|--------------|--------------|------------|--------------|-----------|
|                                     |                                 |           |      | Total        | In           | Out        | In           | Out       |
| 251                                 | Senior Adult Housing – Detached | 161       | d.u. | 856          | 19           | 40         | 43           | 27        |
| 253                                 | Congregate Care Facility        | 140       | d.u. | 284          | 11           | 12         | 16           | 12        |
| 565                                 | Daycare Center                  | 10,000    | s.f. | 476          | 58           | 52         | 52           | 59        |
| <b>Total Net New External Trips</b> |                                 |           |      | <b>1,616</b> | <b>88</b>    | <b>104</b> | <b>111</b>   | <b>98</b> |

As shown in Table 1, the development is anticipated to generate approximately 1,616 trips on a typical weekday, with 192 new trips during the AM peak hour and 209 new trips during the PM peak hour.

### Site Trip Development and Build-out Traffic

The proposed generated trips were assigned to the surrounding roadway network. The overall directional distribution used for this assessment was consistent with the original TIA, though the site traffic percent assignment was revised to reflect the alternative access configuration and anticipated site traffic U-turns at the existing median break on US 15/501 north of the site at Poplar Street:

- 50% to/from the north on US 15/501
- 40% to/from the south on US 15/501
- 10% to/from the west on Briar Chapel Parkway

The site traffic distribution and percent assignment for the net new site trips are shown on **Figure 1** and projected AM and PM peak hour build-out traffic volumes are shown on **Figures 2** and **3**, respectively.

### Capacity Analysis

Capacity analyses were performed using Synchro/SimTraffic Version 10 software. Consistent with the original TIA, peak hour factors (PHF) were obtained from turning movement counts for the existing intersection while a PHF of 0.90 was used at the site driveways. Synchro intersection level-of-service (LOS) reports are attached and the LOS for the study intersections are summarized in Table 2.

| <b>Table 2<br/>Level-of-Service Summary</b>                        |                                     |                                     |
|--|-------------------------------------|-------------------------------------|
| <b>Condition</b>   | <b>AM Peak Hour<br/>LOS (Delay)</b> | <b>PM Peak Hour<br/>LOS (Delay)</b> |
| <b>US 15/501 at Briar Chapel Parkway/Vickers Road (Signalized)</b> |                                     |                                     |
| Existing (2021) Traffic  | B (10.1)                            | B (11.1)                            |
| Background (2025) Traffic  | B (17.5)                            | B (18.6)                            |
| Build-out (2025) Traffic   | C (22.7)                            | C (20.5)                            |
| <b>US 15/501 at South Site Driveway (Unsignalized)</b>             |                                     |                                     |
| Build-out (2024) Traffic – with Northbound Right-turn Lane         | WB – C (24.9)                       | WB – C (17.2)                       |
| <b>US 15/501 at South Site Driveway (Unsignalized)</b>             |                                     |                                     |
| Build-out (2024) Traffic – with Northbound Right-turn Lane         | WB – C (20.4)                       | WB – C (15.5)                       |

This analysis assumed the construction of northbound right-turn lanes on US 15/501 at the site driveways consistent with the review of the original TIA by the North Carolina Department of Transportation (NCDOT). With those turn lanes in place, all of the study intersections are expected to operate at acceptable LOS at project build-out, and SimTraffic simulations indicate that no queuing issues are expected at any intersection.

## Recommendations

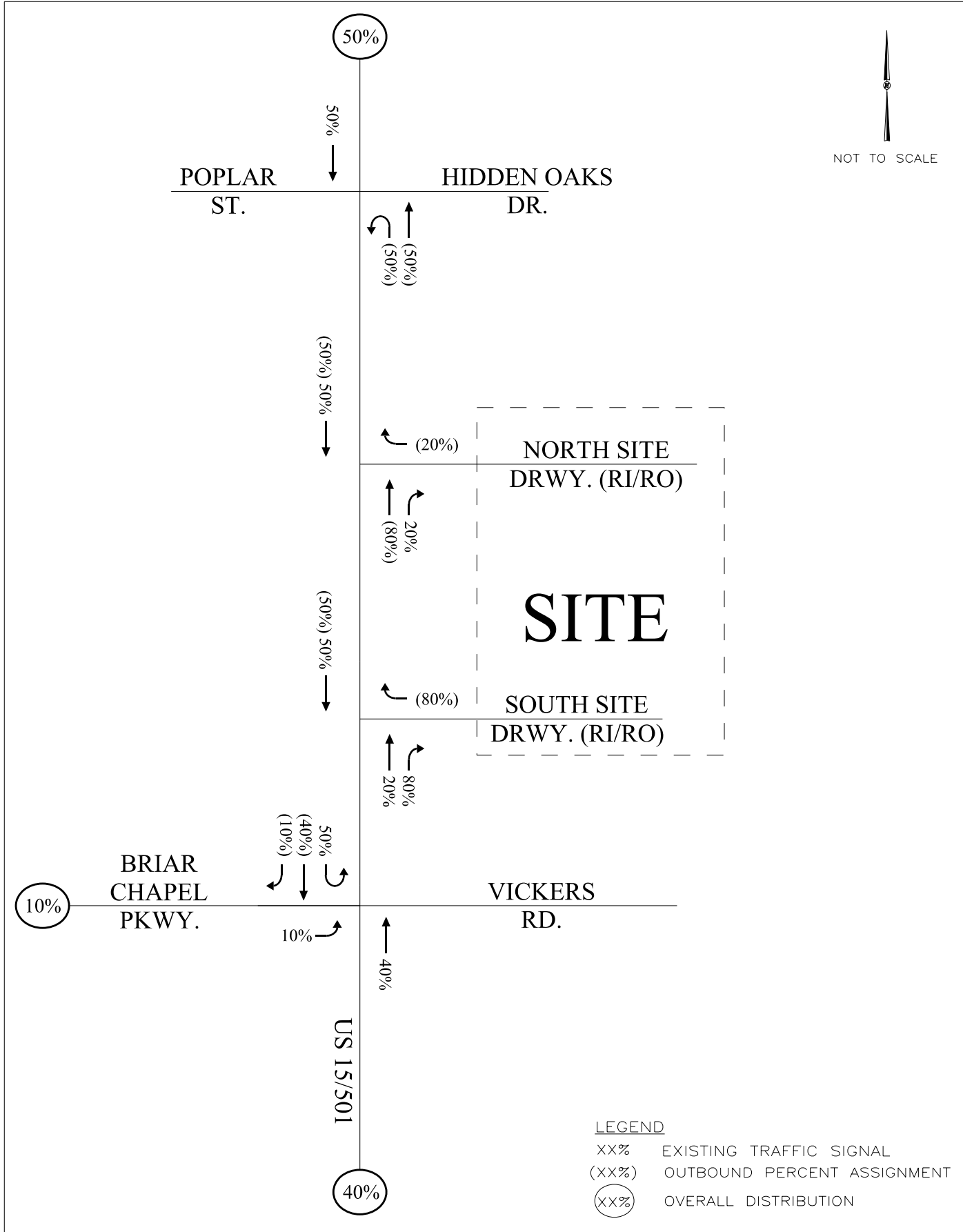
Based on the analysis herein, these study intersections are expected to operate at acceptable LOS and with no queuing issues at project build-out even if site access is only provided along US 15/501. As such, this access configuration is anticipated to be sufficient from a traffic capacity perspective, and no additional improvements are recommended to be performed to accommodate site traffic in this configuration.

The recommended roadway laneage, consistent with the NCDOT review of the original TIA, is shown on **Figure 4**.

Should you have any questions or comments, please do not hesitate to contact me at (919) 678-4185 or [kevin.dean@kimley-horn.com](mailto:kevin.dean@kimley-horn.com).

# Appendix

**Appendix A:**  
**Figures 1-4**



- LEGEND**
- XX% EXISTING TRAFFIC SIGNAL
  - (XX%) OUTBOUND PERCENT ASSIGNMENT
  - (XX%) OVERALL DISTRIBUTION



HERNDON FARM  
CHATHAM COUNTY, NC  
TRAFFIC CAPACITY ANALYSIS

SITE ACCESS ADDENDUM:  
SITE TRAFFIC DISTRIBUTION  
& PERCENT ASSIGNMENT

FIGURE  
1

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



NOT TO SCALE

# SITE

NORTH SITE  
DRWY. (RI/RO)

SOUTH SITE  
DRWY. (RI/RO)

[1140] (96) 1044

[1140] (96) 1044

0 (21) [21]

0 (18) [18]  
1642 (83) [1725]

0 (83) [83]

0 (70) [70]  
1642 (18) [1660]

43 (0) [43]  
9 (0) [9]  
11 (0) [11]

[66] (44) 22  
[70] (0) 70  
[901] (42) 859  
[103] (10) 93

[205] (9) 196  
[40] (0) 40  
[89] (0) 89

US 15/501

VICKERS  
RD.

BRIAR  
CHAPEL  
PKWY.

### LEGEND

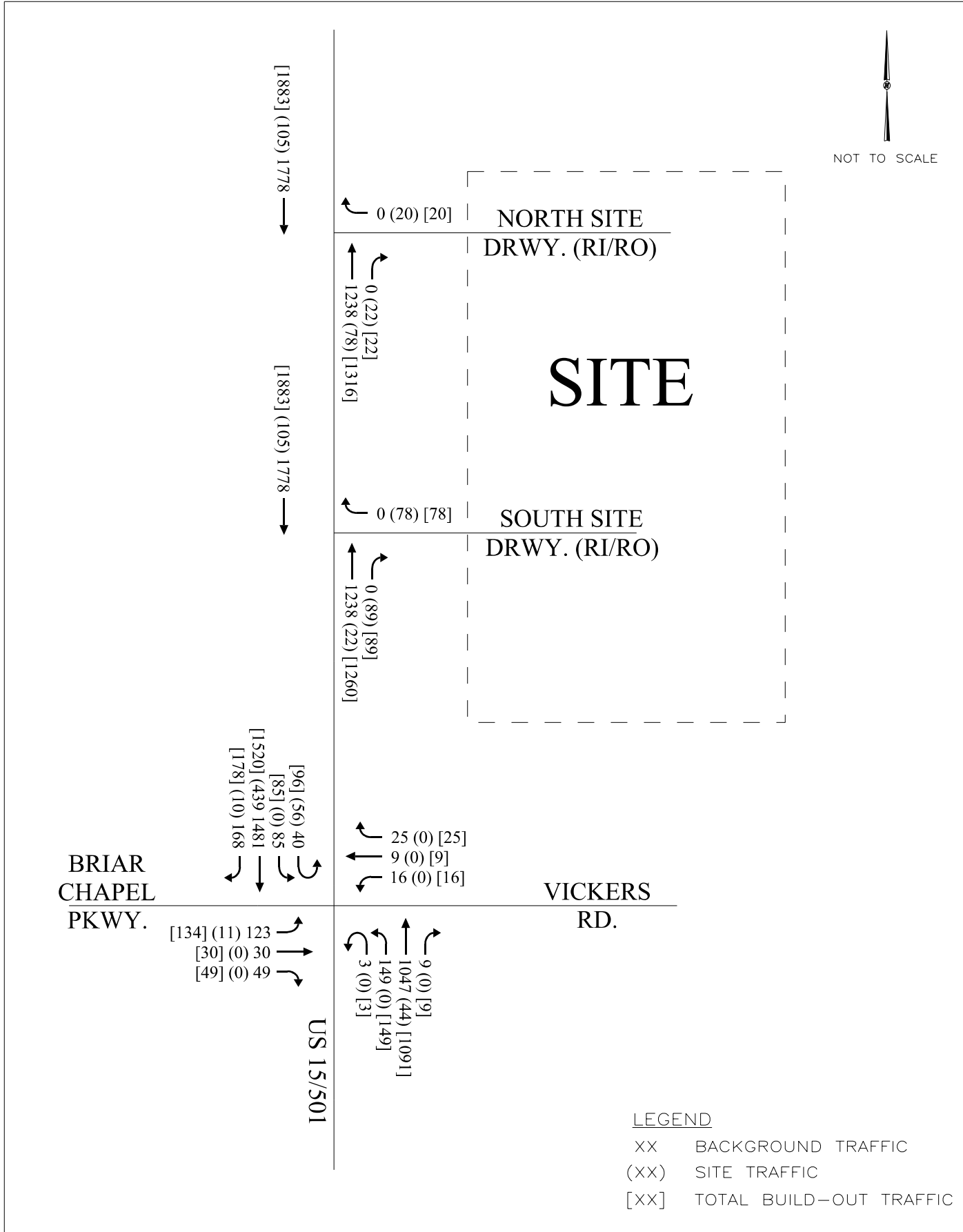
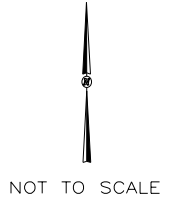
- XX BACKGROUND TRAFFIC
- (XX) SITE TRAFFIC
- [XX] TOTAL BUILD-OUT TRAFFIC



HERNDON FARM  
CHATHAM COUNTY, NC  
TRAFFIC CAPACITY ANALYSIS

SITE ACCESS ADDENDUM:  
PROJECTED (2025) BUILD  
AM PEAK HOUR TRAFFIC VOLUMES

FIGURE  
2



**LEGEND**

- XX BACKGROUND TRAFFIC
- (XX) SITE TRAFFIC
- [XX] TOTAL BUILD-OUT TRAFFIC



HERNDON FARM  
CHATHAM COUNTY, NC  
TRAFFIC CAPACITY ANALYSIS

SITE ACCESS ADDENDUM:  
PROJECTED (2025) BUILD  
PM PEAK HOUR TRAFFIC VOLUMES

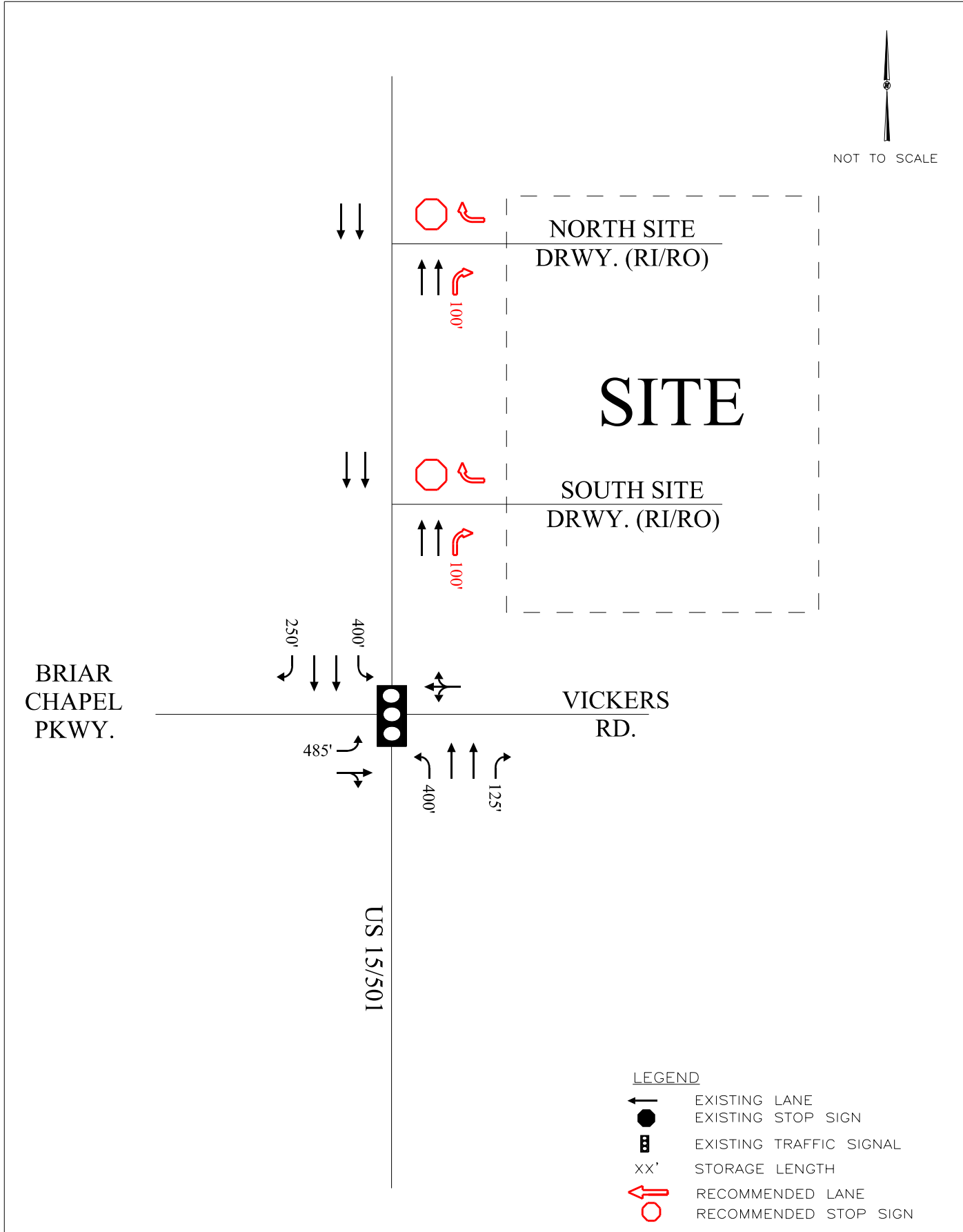
FIGURE  
3

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.





NOT TO SCALE



LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- EXISTING TRAFFIC SIGNAL
- XX' STORAGE LENGTH
- RECOMMENDED LANE
- RECOMMENDED STOP SIGN



HERNDON FARM  
 CHATHAM COUNTY, NC  
 TRAFFIC CAPACITY ANALYSIS

SITE ACCESS ADDENDUM:  
 RECOMMENDED  
 ROADWAY LANEAGE

FIGURE  
 4

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

**Appendix B:  
Trip Generation  
& Intersection Spreadsheets**

**Herndon Farm**

**Table 1 - Trip Generation**

| Land Use                                  | Intensity |      | Daily        | AM Peak Hour |           |            | PM Peak Hour |            |           |
|---|-----------|------|--------------|--------------|-----------|------------|--------------|------------|-----------|
|   |           |      | Total        | Total        | In        | Out        | Total        | In         | Out       |
| 251 Senior Adult Housing - Detached       | 161       | d.u. | 856          | 59           | 19        | 40         | 70           | 43         | 27        |
| 253 Congregate Care Facility <sup>1</sup> | 140       | d.u. | 284          | 23           | 11        | 12         | 28           | 16         | 12        |
| 565 Day Care Center                       | 10,000    | s.f. | 476          | 110          | 58        | 52         | 111          | 52         | 59        |
| <b>Total Net New External Trips</b>       |           |      | <b>1,616</b> | <b>192</b>   | <b>88</b> | <b>104</b> | <b>209</b>   | <b>111</b> | <b>98</b> |

<sup>1</sup>To be conservative, peak hour trip generation for LUC 253 was based on peak hour of the generator as opposed to peak hour of the adjacent street to present a more-conservative approach.

## INTERSECTION ANALYSIS SHEET

|                    |                                      |
|--------------------|--------------------------------------|
| <b>Project:</b>    | Herndon Farm                         |
| <b>Location:</b>   | Chatham County, NC                   |
| <b>Scenario:</b>   | 2021 Access Update - No Vickers Road |
| <b>Ct. Date:</b>   | 2/11/2020                            |
| <b>N/S Street:</b> | US 15/501                            |
| <b>E/W Street:</b> | Briar Chapel Parkway/Vickers Road    |

|                       |       |        |       |        |
|-----------------------|-------|--------|-------|--------|
| <b>Net New Trips:</b> | AM In | AM Out | PM In | PM Out |
|                       | 88    | 104    | 111   | 98     |
| <b>Pass-By Trips:</b> | 0     | 0      | 0     | 0      |

|                            |          |
|----------------------------|----------|
| <b>Annual Growth Rate:</b> | 0.5%     |
| <b>Growth Factor:</b>      | 0.025251 |

|                       |      |
|-----------------------|------|
| <b>Existing Year:</b> | 2020 |
| <b>Buildout Year:</b> | 2025 |

### AM PEAK HOUR AM PHF = 0.96

| Description                       | Briar Chapel Parkway<br><u>Eastbound</u> |         |       | Vickers Road<br><u>Westbound</u> |         |       | US 15/501<br><u>Northbound</u> |       |         |       | US 15/501<br><u>Southbound</u> |       |         |       |
|-----------------------------------|--|---------|-------|----------------------------------|---------|-------|--------------------------------|-------|---------|-------|--------------------------------|-------|---------|-------|
|                                   | Left                                     | Through | Right | Left                             | Through | Right | U-Turn                         | Left  | Through | Right | U-Turn                         | Left  | Through | Right |
| <b>2020 Traffic Count</b>         | 116                                      | 2       | 51    | 11                               | 3       | 19    | 5                              | 52    | 1047    | 12    | 22                             | 15    | 538     | 27    |
| Count Balancing                   | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 0       | 0     | 0                              | 0     | 0       | 0     |
| <b>2020 Existing Traffic</b>      | 116                                      | 2       | 51    | 11                               | 3       | 19    | 5                              | 52    | 1047    | 12    | 22                             | 15    | 538     | 27    |
| Growth Factor (0.005 per year)    | 0.000                                    | 0.000   | 0.000 | 0.025                            | 0.000   | 0.025 | 0.000                          | 0.000 | 0.025   | 0.025 | 0.000                          | 0.025 | 0.025   | 0.000 |
| <b>2025 Background Growth</b>     | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 26      | 0     | 0                              | 0     | 14      | 0     |
| <b>Committed Projects</b>         |  |         |       |                                  |         |       |                                |       |         |       |                                |       |         |       |
| Williams Corner (Updated)         | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 164     | 0     | 0                              | 0     | 129     | 0     |
| Polks Village (Remaining Portion) | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 34      | 0     | 0                              | 0     | 38      | 0     |
| Briar Chapel (Remaining Portion)  | 80                                       | 0       | 38    | 0                                | 0       | 0     | 0                              | 26    | 59      | 0     | 0                              | 0     | 140     | 66    |
| Vickers Bennett - Scen. 3         | 0  | 38      | 0     | 0                                | 6       | 24    | 0                              | 11    | 47      | 0     | 0                              | 55    | 0       | 0     |
| <b>Total Committed Traffic</b>    | 80                                       | 38      | 38    | 0                                | 6       | 24    | 0                              | 37    | 304     | 0     | 0                              | 55    | 307     | 66    |
| <b>2025 Background Traffic</b>    | 196                                      | 40      | 89    | 11                               | 9       | 43    | 5                              | 89    | 1377    | 12    | 22                             | 70    | 859     | 93    |
| <b>Project Traffic</b>            |  |         |       |                                  |         |       |                                |       |         |       |                                |       |         |       |
| Percent Assignment Inbound        | 10%                                      | 0%      | 0%    | 0%                               | 0%      | 0%    | 0%                             | 0%    | 40%     | 0%    | 50%                            | 0%    | 0%      | 0%    |
| Inbound Project Traffic           | 9  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 35      | 0     | 44                             | 0     | 0       | 0     |
| Percent Assignment Outbound       | 0%                                       | 0%      | 0%    | 0%                               | 0%      | 0%    | 0%                             | 0%    | 0%      | 0%    | 0%                             | 0%    | 40%     | 10%   |
| Outbound Project Traffic          | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 0       | 0     | 0                              | 0     | 42      | 10    |
| <b>Total Project Traffic</b>      | 9  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 35      | 0     | 44                             | 0     | 42      | 10    |
| <b>2025 Buildout Total</b>        | 205                                      | 40      | 89    | 11                               | 9       | 43    | 5                              | 89    | 1412    | 12    | 66                             | 70    | 901     | 103   |
| Percent Impact (Approach)         |  | 2.7%    |       |                                  | 0.0%    |       |                                |       | 2.3%    |       |                                |       | 8.4%    |       |
| <b>Overall Percent Impact</b>     | 4.6%                                     |         |       |                                  |         |       |                                |       |         |       |                                |       |         |       |

### PM PEAK HOUR PM PHF = 0.95

| Description                       | Briar Chapel Parkway<br><u>Eastbound</u> |         |       | Vickers Road<br><u>Westbound</u> |         |       | US 15/501<br><u>Northbound</u> |       |         |       | US 15/501<br><u>Southbound</u> |       |         |       |
|-----------------------------------|--|---------|-------|----------------------------------|---------|-------|--------------------------------|-------|---------|-------|--------------------------------|-------|---------|-------|
|                                   | Left                                     | Through | Right | Left                             | Through | Right | U-Turn                         | Left  | Through | Right | U-Turn                         | Left  | Through | Right |
| <b>2020 Traffic Count</b>         | 68                                       | 3       | 26    | 16                               | 6       | 12    | 3                              | 82    | 652     | 9     | 40                             | 15    | 1107    | 88    |
| Count Balancing                   | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 0       | 0     | 0                              | 0     | 0       | 0     |
| <b>2020 Existing Traffic</b>      | 68                                       | 3       | 26    | 16                               | 6       | 12    | 3                              | 82    | 652     | 9     | 40                             | 15    | 1107    | 88    |
| Growth Factor (0.005 per year)    | 0.000                                    | 0.000   | 0.000 | 0.025                            | 0.000   | 0.025 | 0.000                          | 0.000 | 0.025   | 0.025 | 0.000                          | 0.025 | 0.025   | 0.000 |
| <b>2025 Background Growth</b>     | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 16      | 0     | 0                              | 0     | 28      | 0     |
| <b>Committed Projects</b>         |  |         |       |                                  |         |       |                                |       |         |       |                                |       |         |       |
| Williams Corner (Updated)         | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 158     | 0     | 0                              | 0     | 204     | 0     |
| Polks Village (Remaining Portion) | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 32      | 0     | 0                              | 0     | 32      | 0     |
| Briar Chapel (Remaining Portion)  | 55                                       | 0       | 23    | 0                                | 0       | 0     | 0                              | 35    | 138     | 0     | 0                              | 0     | 110     | 80    |
| Vickers Bennett - Scen. 3         | 0  | 27      | 0     | 0                                | 3       | 13    | 0                              | 32    | 51      | 0     | 0                              | 70    | 0       | 0     |
| <b>Total Committed Traffic</b>    | 55                                       | 27      | 23    | 0                                | 3       | 13    | 0                              | 67    | 379     | 0     | 0                              | 70    | 346     | 80    |
| <b>2025 Background Traffic</b>    | 123                                      | 30      | 49    | 16                               | 9       | 25    | 3                              | 149   | 1047    | 9     | 40                             | 85    | 1481    | 168   |
| <b>Project Traffic</b>            |  |         |       |                                  |         |       |                                |       |         |       |                                |       |         |       |
| Percent Assignment Inbound        | 10%                                      | 0%      | 0%    | 0%                               | 0%      | 0%    | 0%                             | 0%    | 40%     | 0%    | 50%                            | 0%    | 0%      | 0%    |
| Inbound Project Traffic           | 11                                       | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 44      | 0     | 56                             | 0     | 0       | 0     |
| Percent Assignment Outbound       | 0%                                       | 0%      | 0%    | 0%                               | 0%      | 0%    | 0%                             | 0%    | 0%      | 0%    | 0%                             | 0%    | 40%     | 10%   |
| Outbound Project Traffic          | 0  | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 0       | 0     | 0                              | 0     | 39      | 10    |
| <b>Total Project Traffic</b>      | 11                                       | 0       | 0     | 0                                | 0       | 0     | 0                              | 0     | 44      | 0     | 56                             | 0     | 39      | 10    |
| <b>2025 Buildout Total</b>        | 134                                      | 30      | 49    | 16                               | 9       | 25    | 3                              | 149   | 1091    | 9     | 96                             | 85    | 1520    | 178   |
| Percent Impact (Approach)         |  | 5.2%    |       |                                  | 0.0%    |       |                                |       | 3.5%    |       |                                |       | 5.6%    |       |
| <b>Overall Percent Impact</b>     | 4.7%                                     |         |       |                                  |         |       |                                |       |         |       |                                |       |         |       |

## INTERSECTION ANALYSIS SHEET

|                    |   |
|--------------------|---|
| <b>Project:</b>    | <b>Herndon Farm</b>                         |
| <b>Location:</b>   | <b>Chatham County, NC</b>                   |
| <b>Scenario:</b>   | <b>2021 Access Update - No Vickers Road</b> |
| <b>Ct. Date</b>    | <b>Balanced with 15/501 @ Vickers</b>       |
| <b>N/S Street:</b> | <b>US 15/501</b>                            |
| <b>E/W Street:</b> | <b>South Site Driveway (RI/RO)</b>          |

|                       |               |              |               |
|-----------------------|---------------|--------------|---------------|
| <b>AM In</b>          | <b>AM Out</b> | <b>PM In</b> | <b>PM Out</b> |
| 88                    | 104           | 111          | 98            |
| <b>Net New Trips:</b> |               |              |               |
| 0                     | 0             | 0            | 0             |
| <b>Pass-By Trips:</b> |               |              |               |
|                       |               |              |               |

|                            |          |                       |      |
|----------------------------|----------|-----------------------|------|
| <b>Annual Growth Rate:</b> | 0.5%     | <b>Existing Year:</b> | 2020 |
| <b>Growth Factor:</b>      | 0.025251 | <b>Buildout Year:</b> | 2025 |

### AM PEAK HOUR AM PHF = 0.90

| Description                       | - Eastbound |         |       | South Site Driveway (RI/RO)<br>Westbound |         |       | US 15/501<br>Northbound |         |       | US 15/501<br>Southbound |         |       |
|-----------------------------------|-------------|---------|-------|--|---------|-------|-------------------------|---------|-------|-------------------------|---------|-------|
|                                   | Left        | Through | Right | Left                                     | Through | Right | Left                    | Through | Right | Left                    | Through | Right |
| <b>2020 Traffic Count</b>         | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 0       | 0     | 0                       | 0       | 0     |
| Count Balancing                   | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 1204    | 0     | 0                       | 602     | 0     |
| <b>2020 Existing Traffic</b>      | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 1204    | 0     | 0                       | 602     | 0     |
| Growth Factor (0.005 per year)    | 0.025       | 0.025   | 0.025 | 0.000                                    | 0.000   | 0.000 | 0.000                   | 0.025   | 0.000 | 0.000                   | 0.025   | 0.000 |
| <b>2025 Background Growth</b>     | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 30      | 0     | 0                       | 15      | 0     |
| <b>Committed Projects</b>         |             |         |       |  |         |       |                         |         |       |                         |         |       |
| Williams Corner (Updated)         | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 164     | 0     | 0                       | 129     | 0     |
| Polks Village (Remaining Portion) | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 34      | 0     | 0                       | 38      | 0     |
| Briar Chapel (Remaining Portion)  | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 139     | 0     | 0                       | 205     | 0     |
| Vickers Bennett - Scen. 3         | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 71      | 0     | 0                       | 55      | 0     |
| <b>Total Committed Traffic</b>    | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 408     | 0     | 0                       | 427     | 0     |
| <b>2025 Background Traffic</b>    | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 1642    | 0     | 0                       | 1044    | 0     |
| <b>Project Traffic</b>            |             |         |       |  |         |       |                         |         |       |                         |         |       |
| Percent Assignment Inbound        | 0%          | 0%      | 0%    | 0%                                       | 0%      | 0%    | 0%                      | 20%     | 80%   | 0%                      | 50%     | 0%    |
| Inbound Project Traffic           | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 18      | 70    | 0                       | 44      | 0     |
| Percent Assignment Outbound       | 0%          | 0%      | 0%    | 0%                                       | 0%      | 80%   | 0%                      | 0%      | 0%    | 0%                      | 50%     | 0%    |
| Outbound Project Traffic          | 0           | 0       | 0     | 0  | 0       | 83    | 0                       | 0       | 0     | 0                       | 52      | 0     |
| <b>Total Project Traffic</b>      | 0           | 0       | 0     | 0  | 0       | 83    | 0                       | 18      | 70    | 0                       | 96      | 0     |
| <b>2025 Buildout Total</b>        | 0           | 0       | 0     | 0  | 0       | 83    | 0                       | 1660    | 70    | 0                       | 1140    | 0     |
| Percent Impact (Approach)         |             | -       |       |  | 100.0%  |       |                         | 5.1%    |       |                         | 8.4%    |       |

**Overall Percent Impact** 9.0%

### PM PEAK HOUR PM PHF = 0.90

| Description                       | - Eastbound |         |       | South Site Driveway (RI/RO)<br>Westbound |         |       | US 15/501<br>Northbound |         |       | US 15/501<br>Southbound |         |       |
|-----------------------------------|-------------|---------|-------|--|---------|-------|-------------------------|---------|-------|-------------------------|---------|-------|
|                                   | Left        | Through | Right | Left                                     | Through | Right | Left                    | Through | Right | Left                    | Through | Right |
| <b>2020 Traffic Count</b>         | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 0       | 0     | 0                       | 0       | 0     |
| Count Balancing                   | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 772     | 0     | 0                       | 1250    | 0     |
| <b>2020 Existing Traffic</b>      | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 772     | 0     | 0                       | 1250    | 0     |
| Growth Factor (0.005 per year)    | 0.025       | 0.025   | 0.025 | 0.000                                    | 0.000   | 0.000 | 0.000                   | 0.025   | 0.000 | 0.000                   | 0.025   | 0.000 |
| <b>2025 Background Growth</b>     | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 19      | 0     | 0                       | 32      | 0     |
| <b>Committed Projects</b>         |             |         |       |  |         |       |                         |         |       |                         |         |       |
| Williams Corner (Updated)         | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 158     | 0     | 0                       | 204     | 0     |
| Polks Village (Remaining Portion) | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 32      | 0     | 0                       | 32      | 0     |
| Briar Chapel (Remaining Portion)  | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 193     | 0     | 0                       | 190     | 0     |
| Vickers Bennett - Scen. 3         | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 64      | 0     | 0                       | 70      | 0     |
| <b>Total Committed Traffic</b>    | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 447     | 0     | 0                       | 496     | 0     |
| <b>2025 Background Traffic</b>    | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 1238    | 0     | 0                       | 1778    | 0     |
| <b>Project Traffic</b>            |             |         |       |  |         |       |                         |         |       |                         |         |       |
| Percent Assignment Inbound        | 0%          | 0%      | 0%    | 0%                                       | 0%      | 0%    | 0%                      | 20%     | 80%   | 0%                      | 50%     | 0%    |
| Inbound Project Traffic           | 0           | 0       | 0     | 0  | 0       | 0     | 0                       | 22      | 89    | 0                       | 56      | 0     |
| Percent Assignment Outbound       | 0%          | 0%      | 0%    | 0%                                       | 0%      | 80%   | 0%                      | 0%      | 0%    | 0%                      | 50%     | 0%    |
| Outbound Project Traffic          | 0           | 0       | 0     | 0  | 0       | 78    | 0                       | 0       | 0     | 0                       | 49      | 0     |
| <b>Total Project Traffic</b>      | 0           | 0       | 0     | 0  | 0       | 78    | 0                       | 22      | 89    | 0                       | 105     | 0     |
| <b>2025 Buildout Total</b>        | 0           | 0       | 0     | 0  | 0       | 78    | 0                       | 1260    | 89    | 0                       | 1883    | 0     |
| Percent Impact (Approach)         |             | -       |       |  | 100.0%  |       |                         | 8.2%    |       |                         | 5.6%    |       |

**Overall Percent Impact** 8.9%

## INTERSECTION ANALYSIS SHEET

|                    |   |
|--------------------|---|
| <b>Project:</b>    | <b>Herndon Farm</b>                         |
| <b>Location:</b>   | <b>Chatham County, NC</b>                   |
| <b>Scenario:</b>   | <b>2021 Access Update - No Vickers Road</b> |
| <b>Ct. Date</b>    | <b>Balanced with 15/501 @ Vickers</b>       |
| <b>N/S Street:</b> | <b>US 15/501</b>                            |
| <b>E/W Street:</b> | <b>North Site Driveway (Left-in)</b>        |

|                       |               |              |               |
|-----------------------|---------------|--------------|---------------|
| <b>AM In</b>          | <b>AM Out</b> | <b>PM In</b> | <b>PM Out</b> |
| 88                    | 104           | 111          | 98            |
| <b>Net New Trips:</b> |               |              |               |
| 0                     | 0             | 0            | 0             |
| <b>Pass-By Trips:</b> |               |              |               |
|                       |               |              |               |

|                            |          |                       |      |
|----------------------------|----------|-----------------------|------|
| <b>Annual Growth Rate:</b> | 0.5%     | <b>Existing Year:</b> | 2020 |
| <b>Growth Factor:</b>      | 0.025251 | <b>Buildout Year:</b> | 2025 |

### AM PEAK HOUR AM PHF = 0.90

| Description                       | - Eastbound |         |       | North Site Driveway (Left-in) Westbound |         |       | US 15/501 Northbound |         |       | US 15/501 Southbound |         |       |
|-----------------------------------|-------------|---------|-------|---|---------|-------|----------------------|---------|-------|----------------------|---------|-------|
|                                   | Left        | Through | Right | Left                                    | Through | Right | Left                 | Through | Right | Left                 | Through | Right |
| <b>2020 Traffic Count</b>         | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 0       | 0     | 0                    | 0       | 0     |
| Count Balancing                   | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 1204    | 0     | 0                    | 602     | 0     |
| <b>2020 Existing Traffic</b>      | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 1204    | 0     | 0                    | 602     | 0     |
| Growth Factor (0.005 per year)    | 0.025       | 0.025   | 0.025 | 0.000                                   | 0.000   | 0.000 | 0.000                | 0.025   | 0.000 | 0.000                | 0.025   | 0.000 |
| <b>2025 Background Growth</b>     | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 30      | 0     | 0                    | 15      | 0     |
| <b>Committed Projects</b>         |             |         |       |   |         |       |                      |         |       |                      |         |       |
| Williams Corner (Updated)         | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 164     | 0     | 0                    | 129     | 0     |
| Polks Village (Remaining Portion) | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 34      | 0     | 0                    | 38      | 0     |
| Briar Chapel (Remaining Portion)  | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 139     | 0     | 0                    | 205     | 0     |
| Vickers Bennett - Scen. 3         | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 71      | 0     | 0                    | 55      | 0     |
| <b>Total Committed Traffic</b>    | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 408     | 0     | 0                    | 427     | 0     |
| <b>2025 Background Traffic</b>    | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 1642    | 0     | 0                    | 1044    | 0     |
| <b>Project Traffic</b>            |             |         |       |   |         |       |                      |         |       |                      |         |       |
| Percent Assignment Inbound        | 0%          | 0%      | 0%    | 0%                                      | 0%      | 0%    | 0%                   | 0%      | 20%   | 0%                   | 50%     | 0%    |
| Inbound Project Traffic           | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 0       | 18    | 0                    | 44      | 0     |
| Percent Assignment Outbound       | 0%          | 0%      | 0%    | 0%                                      | 0%      | 20%   | 0%                   | 80%     | 0%    | 0%                   | 50%     | 0%    |
| Outbound Project Traffic          | 0           | 0       | 0     | 0                                       | 0       | 21    | 0                    | 83      | 0     | 0                    | 52      | 0     |
| <b>Total Project Traffic</b>      | 0           | 0       | 0     | 0                                       | 0       | 21    | 0                    | 83      | 18    | 0                    | 96      | 0     |
| <b>2025 Buildout Total</b>        | 0           | 0       | 0     | 0                                       | 0       | 21    | 0                    | 1725    | 18    | 0                    | 1140    | 0     |
| Percent Impact (Approach)         |             | -       |       |   | 100.0%  |       |                      | 5.8%    |       |                      | 8.4%    |       |

**Overall Percent Impact** 7.5%

### PM PEAK HOUR PM PHF = 0.90

| Description                       | - Eastbound |         |       | North Site Driveway (Left-in) Westbound |         |       | US 15/501 Northbound |         |       | US 15/501 Southbound |         |       |
|-----------------------------------|-------------|---------|-------|---|---------|-------|----------------------|---------|-------|----------------------|---------|-------|
|                                   | Left        | Through | Right | Left                                    | Through | Right | Left                 | Through | Right | Left                 | Through | Right |
| <b>2020 Traffic Count</b>         | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 0       | 0     | 0                    | 0       | 0     |
| Count Balancing                   | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 772     | 0     | 0                    | 1250    | 0     |
| <b>2020 Existing Traffic</b>      | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 772     | 0     | 0                    | 1250    | 0     |
| Growth Factor (0.005 per year)    | 0.025       | 0.025   | 0.025 | 0.000                                   | 0.000   | 0.000 | 0.000                | 0.025   | 0.000 | 0.000                | 0.025   | 0.000 |
| <b>2025 Background Growth</b>     | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 19      | 0     | 0                    | 32      | 0     |
| <b>Committed Projects</b>         |             |         |       |   |         |       |                      |         |       |                      |         |       |
| Williams Corner (Updated)         | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 158     | 0     | 0                    | 204     | 0     |
| Polks Village (Remaining Portion) | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 32      | 0     | 0                    | 32      | 0     |
| Briar Chapel (Remaining Portion)  | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 193     | 0     | 0                    | 190     | 0     |
| Vickers Bennett - Scen. 3         | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 64      | 0     | 0                    | 70      | 0     |
| <b>Total Committed Traffic</b>    | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 447     | 0     | 0                    | 496     | 0     |
| <b>2025 Background Traffic</b>    | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 1238    | 0     | 0                    | 1778    | 0     |
| <b>Project Traffic</b>            |             |         |       |   |         |       |                      |         |       |                      |         |       |
| Percent Assignment Inbound        | 0%          | 0%      | 0%    | 0%                                      | 0%      | 0%    | 0%                   | 0%      | 20%   | 0%                   | 50%     | 0%    |
| Inbound Project Traffic           | 0           | 0       | 0     | 0                                       | 0       | 0     | 0                    | 0       | 22    | 0                    | 56      | 0     |
| Percent Assignment Outbound       | 0%          | 0%      | 0%    | 0%                                      | 0%      | 20%   | 0%                   | 80%     | 0%    | 0%                   | 50%     | 0%    |
| Outbound Project Traffic          | 0           | 0       | 0     | 0                                       | 0       | 20    | 0                    | 78      | 0     | 0                    | 49      | 0     |
| <b>Total Project Traffic</b>      | 0           | 0       | 0     | 0                                       | 0       | 20    | 0                    | 78      | 22    | 0                    | 105     | 0     |
| <b>2025 Buildout Total</b>        | 0           | 0       | 0     | 0                                       | 0       | 20    | 0                    | 1316    | 22    | 0                    | 1883    | 0     |
| Percent Impact (Approach)         |             | -       |       |   | 100.0%  |       |                      | 7.5%    |       |                      | 5.6%    |       |

**Overall Percent Impact** 6.9%

**Appendix C:**  
**Synchro LOS Reports**





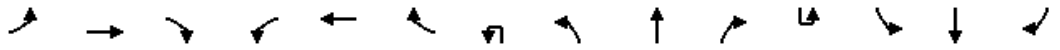
Offset: 15 (13%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.46  
 Intersection Signal Delay: 10.1 Intersection LOS: B  
 Intersection Capacity Utilization 60.4% ICU Level of Service B  
 Analysis Period (min) 15  
 Description: 08-1090  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road



Herndon Farm  
2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road

Existing PM  
07/08/2020



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBU   | NBL   | NBT   | NBR   | SBU   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)    | 68    | 4     | 26   | 16    | 6     | 12   | 4     | 82    | 652   | 9     | 40    | 15    | 1107  | 88    |
| Future Volume (vph)     | 68    | 4     | 26   | 16    | 6     | 12   | 4     | 82    | 652   | 9     | 40    | 15    | 1107  | 88    |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    | 12   | 12    | 12    | 12   | 12    | 12    | 12    | 12    | 12    | 12    | 12    | 12    |
| Grade (%)               |       | -1%   |      |       | -5%   |      |       |       | 1%    |       |       |       |       | -2%   |
| Storage Length (ft)     | 485   |       | 0    | 0     |       | 0    |       | 400   |       | 125   |       | 400   |       | 250   |
| Storage Lanes           | 1     |       | 0    | 0     |       | 0    |       | 1     |       | 1     |       | 1     |       | 1     |
| Taper Length (ft)       | 100   |       |      | 100   |       |      |       | 100   |       |       |       | 100   |       |       |
| Satd. Flow (prot)       | 1778  | 1627  | 0    | 0     | 1774  | 0    | 0     | 1761  | 3522  | 1575  | 0     | 1787  | 3575  | 1599  |
| Flt Permitted           | 0.948 |       |      |       | 0.834 |      |       | 0.184 |       |       |       | 0.361 |       |       |
| Satd. Flow (perm)       | 1775  | 1627  | 0    | 0     | 1514  | 0    | 0     | 341   | 3522  | 1575  | 0     | 679   | 3575  | 1599  |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 27    |      |       | 13    |      |       |       |       | 152   |       |       |       | 95    |
| Link Speed (mph)        |       | 35    |      |       | 35    |      |       |       | 55    |       |       |       |       | 55    |
| Link Distance (ft)      |       | 1355  |      |       | 868   |      |       |       | 1385  |       |       |       | 1800  |       |
| Travel Time (s)         |       | 26.4  |      |       | 16.9  |      |       |       | 17.2  |       |       |       | 22.3  |       |
| Confl. Peds. (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Confl. Bikes (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Peak Hour Factor        | 0.95  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  |
| Growth Factor           | 100%  | 100%  | 100% | 100%  | 100%  | 100% | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  |
| Heavy Vehicles (%)      | 2%    | 2%    | 2%   | 2%    | 2%    | 2%   | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Parking (#/hr)          |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Mid-Block Traffic (%)   |       | 0%    |      |       | 0%    |      |       |       | 0%    |       |       |       | 0%    |       |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)   | 72    | 31    | 0    | 0     | 36    | 0    | 0     | 90    | 686   | 9     | 0     | 58    | 1165  | 93    |
| Turn Type               | D.P+P | NA    |      | Perm  | NA    |      | D.P+P | D.P+P | NA    | Perm  | D.P+P | D.P+P | NA    | pm+ov |
| Protected Phases        | 7     | 4     |      |       | 8     |      | 5     | 5     | 2     |       | 1     | 1     | 6     | 7     |
| Permitted Phases        | 8     |       |      | 8     |       |      | 6     | 6     |       | 2     | 2     | 2     |       | 6     |
| Detector Phase          | 7     | 4     |      | 8     | 8     |      | 5     | 5     | 2     | 2     | 1     | 1     | 6     | 7     |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   | 14.0  | 14.0  | 7.0   | 7.0   | 14.0  | 7.0   |
| Minimum Split (s)       | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 15.0  | 15.0  | 22.0  | 22.0  | 15.0  | 15.0  | 35.5  | 15.0  |
| Total Split (s)         | 15.0  | 35.0  |      | 20.0  | 20.0  |      | 15.0  | 15.0  | 70.0  | 70.0  | 15.0  | 15.0  | 70.0  | 15.0  |
| Total Split (%)         | 12.5% | 29.2% |      | 16.7% | 16.7% |      | 12.5% | 12.5% | 58.3% | 58.3% | 12.5% | 12.5% | 58.3% | 12.5% |
| Yellow Time (s)         | 3.0   | 3.9   |      | 4.2   | 4.2   |      | 3.0   | 3.0   | 5.4   | 5.4   | 3.0   | 3.0   | 5.4   | 3.0   |
| All-Red Time (s)        | 3.3   | 2.7   |      | 2.7   | 2.7   |      | 3.5   | 3.5   | 1.1   | 1.1   | 3.3   | 3.3   | 1.1   | 3.3   |
| Lost Time Adjust (s)    | -1.3  | -1.6  |      |       | -1.9  |      | -1.5  | -1.5  | -1.5  | -1.5  |       | -1.3  | -1.5  | -1.3  |
| Total Lost Time (s)     | 5.0   | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  |       |      | Lag   | Lag   |      | Lead  | Lead  | Lag   | Lag   | Lead  | Lead  | Lag   | Lead  |
| Lead-Lag Optimize?      | Yes   |       |      | Yes   | Yes   |      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | None  | C-Max | C-Max | None  | None  | C-Max | None  |
| Act Effct Green (s)     | 15.4  | 18.4  |      |       | 9.5   |      |       | 86.6  | 81.0  | 81.0  |       | 87.6  | 77.9  | 92.4  |
| Actuated g/C Ratio      | 0.13  | 0.15  |      |       | 0.08  |      |       | 0.72  | 0.68  | 0.68  |       | 0.73  | 0.65  | 0.77  |
| v/c Ratio               | 0.32  | 0.11  |      |       | 0.27  |      |       | 0.26  | 0.29  | 0.01  |       | 0.10  | 0.50  | 0.07  |
| Control Delay           | 45.8  | 16.4  |      |       | 42.5  |      |       | 5.4   | 4.8   | 0.0   |       | 5.3   | 13.1  | 1.2   |
| Queue Delay             | 0.0   | 0.0   |      |       | 0.0   |      |       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Delay             | 45.8  | 16.4  |      |       | 42.5  |      |       | 5.4   | 4.8   | 0.0   |       | 5.3   | 13.1  | 1.2   |
| LOS                     | D     | B     |      |       | D     |      |       | A     | A     | A     |       | A     | B     | A     |
| Approach Delay          |       | 36.9  |      |       | 42.5  |      |       |       | 4.8   |       |       |       |       | 11.9  |
| Approach LOS            |       | D     |      |       | D     |      |       |       | A     |       |       |       |       | B     |
| Queue Length 50th (ft)  | 47    | 3     |      |       | 17    |      |       | 3     | 147   | 0     |       | 12    | 260   | 0     |
| Queue Length 95th (ft)  | 88    | 29    |      |       | 51    |      |       | 28    | 198   | m0    |       | 26    | 345   | 14    |
| Internal Link Dist (ft) |       | 1275  |      |       | 788   |      |       |       | 1305  |       |       |       | 1720  |       |
| Turn Bay Length (ft)    | 485   |       |      |       |       |      |       | 400   |       | 125   |       | 400   |       | 250   |
| Base Capacity (vph)     | 235   | 427   |      |       | 200   |      |       | 368   | 2376  | 1112  |       | 595   | 2321  | 1259  |
| Starvation Cap Reductn  | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.31  | 0.07  |      |       | 0.18  |      |       | 0.24  | 0.29  | 0.01  |       | 0.10  | 0.50  | 0.07  |

Intersection Summary

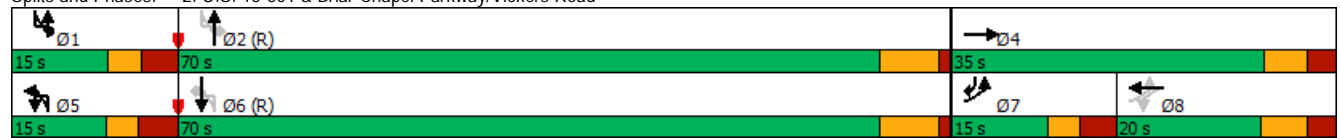
Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

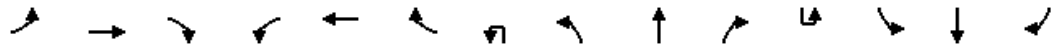
|   |                        |
|---|------------------------|
| Offset: 15 (13%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green |                        |
| Natural Cycle: 85   |                        |
| Control Type: Actuated-Coordinated                                      |                        |
| Maximum v/c Ratio: 0.50   |                        |
| Intersection Signal Delay: 11.1   | Intersection LOS: B    |
| Intersection Capacity Utilization 57.5%                                 | ICU Level of Service B |
| Analysis Period (min) 15  |                        |
| Description: 08-1090  |                        |
| m Volume for 95th percentile queue is metered by upstream signal.       |                        |

Splits and Phases: 2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road



Herndon Farm  
2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road

Background AM  
07/14/2020



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBU   | NBL   | NBT   | NBR   | SBU   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)    | 196   | 40    | 89   | 11    | 9     | 43   | 5     | 89    | 1377  | 12    | 22    | 70    | 859   | 93    |
| Future Volume (vph)     | 196   | 40    | 89   | 11    | 9     | 43   | 5     | 89    | 1377  | 12    | 22    | 70    | 859   | 93    |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    | 12   | 12    | 12    | 12   | 12    | 12    | 12    | 12    | 12    | 12    | 12    | 12    |
| Grade (%)               |       | -1%   |      |       | -5%   |      |       |       | 1%    |       |       |       |       | -2%   |
| Storage Length (ft)     | 485   |       | 0    | 0     |       | 0    |       | 400   |       | 125   |       | 400   |       | 250   |
| Storage Lanes           | 1     |       | 0    | 0     |       | 0    |       | 1     |       | 1     |       | 1     |       | 1     |
| Taper Length (ft)       | 100   |       |      | 100   |       |      |       | 100   |       |       |       | 100   |       |       |
| Satd. Flow (prot)       | 1778  | 1679  | 0    | 0     | 1622  | 0    | 0     | 1761  | 3522  | 1575  | 0     | 1787  | 3575  | 1599  |
| Flt Permitted           | 0.688 |       |      |       | 0.910 |      |       | 0.255 |       |       |       | 0.095 |       |       |
| Satd. Flow (perm)       | 1288  | 1679  | 0    | 0     | 1488  | 0    | 0     | 473   | 3522  | 1575  | 0     | 179   | 3575  | 1599  |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 93    |      |       | 45    |      |       |       |       | 152   |       |       |       | 97    |
| Link Speed (mph)        |       | 35    |      |       | 35    |      |       |       | 55    |       |       |       |       | 55    |
| Link Distance (ft)      |       | 1355  |      |       | 868   |      |       |       | 545   |       |       |       |       | 1800  |
| Travel Time (s)         |       | 26.4  |      |       | 16.9  |      |       |       | 6.8   |       |       |       |       | 22.3  |
| Confl. Peds. (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Confl. Bikes (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Peak Hour Factor        | 0.96  | 0.96  | 0.96 | 0.96  | 0.96  | 0.96 | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  |
| Growth Factor           | 100%  | 100%  | 100% | 100%  | 100%  | 100% | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  |
| Heavy Vehicles (%)      | 2%    | 2%    | 2%   | 8%    | 8%    | 8%   | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Parking (#/hr)          |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Mid-Block Traffic (%)   |       | 0%    |      |       | 0%    |      |       |       | 0%    |       |       |       |       | 0%    |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)   | 204   | 135   | 0    | 0     | 65    | 0    | 0     | 98    | 1434  | 13    | 0     | 96    | 895   | 97    |
| Turn Type               | D.P+P | NA    |      | Perm  | NA    |      | D.P+P | D.P+P | NA    | Perm  | D.P+P | D.P+P | NA    | pm+ov |
| Protected Phases        | 7     | 4     |      |       | 8     |      | 5     | 5     | 2     |       | 1     | 1     | 6     | 7     |
| Permitted Phases        | 8     |       |      | 8     |       |      | 6     | 6     |       | 2     | 2     | 2     |       | 6     |
| Detector Phase          | 7     | 4     |      | 8     | 8     |      | 5     | 5     | 2     | 2     | 1     | 1     | 6     | 7     |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   | 14.0  | 14.0  | 7.0   | 7.0   | 14.0  | 7.0   |
| Minimum Split (s)       | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 15.0  | 15.0  | 22.0  | 22.0  | 15.0  | 15.0  | 35.5  | 15.0  |
| Total Split (s)         | 20.0  | 40.0  |      | 20.0  | 20.0  |      | 15.0  | 15.0  | 65.0  | 65.0  | 15.0  | 15.0  | 65.0  | 20.0  |
| Total Split (%)         | 16.7% | 33.3% |      | 16.7% | 16.7% |      | 12.5% | 12.5% | 54.2% | 54.2% | 12.5% | 12.5% | 54.2% | 16.7% |
| Yellow Time (s)         | 3.0   | 3.9   |      | 4.2   | 4.2   |      | 3.0   | 3.0   | 5.4   | 5.4   | 3.0   | 3.0   | 5.4   | 3.0   |
| All-Red Time (s)        | 3.3   | 2.7   |      | 2.7   | 2.7   |      | 3.5   | 3.5   | 1.1   | 1.1   | 3.3   | 3.3   | 1.1   | 3.3   |
| Lost Time Adjust (s)    | -1.3  | -1.6  |      |       | -1.9  |      | -1.5  | -1.5  | -1.5  | -1.5  |       | -1.3  | -1.5  | -1.3  |
| Total Lost Time (s)     | 5.0   | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  |       |      | Lag   | Lag   |      | Lead  | Lead  | Lag   | Lag   | Lead  | Lead  | Lag   | Lead  |
| Lead-Lag Optimize?      | Yes   |       |      | Yes   | Yes   |      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | None  | C-Max | C-Max | None  | None  | C-Max | None  |
| Act Effct Green (s)     | 22.6  | 26.6  |      |       | 9.8   |      |       | 78.4  | 69.0  | 69.0  |       | 78.4  | 69.4  | 89.0  |
| Actuated g/C Ratio      | 0.19  | 0.22  |      |       | 0.08  |      |       | 0.65  | 0.58  | 0.58  |       | 0.65  | 0.58  | 0.74  |
| v/c Ratio               | 0.68  | 0.30  |      |       | 0.40  |      |       | 0.24  | 0.71  | 0.01  |       | 0.40  | 0.43  | 0.08  |
| Control Delay           | 52.0  | 14.7  |      |       | 29.3  |      |       | 5.7   | 15.7  | 0.0   |       | 12.5  | 16.1  | 1.3   |
| Queue Delay             | 0.0   | 0.0   |      |       | 0.0   |      |       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Delay             | 52.0  | 14.7  |      |       | 29.3  |      |       | 5.7   | 15.7  | 0.0   |       | 12.5  | 16.1  | 1.3   |
| LOS                     | D     | B     |      |       | C     |      |       | A     | B     | A     |       | B     | B     | A     |
| Approach Delay          |       | 37.2  |      |       | 29.3  |      |       |       | 14.9  |       |       |       |       | 14.4  |
| Approach LOS            |       | D     |      |       | C     |      |       |       | B     |       |       |       |       | B     |
| Queue Length 50th (ft)  | 136   | 25    |      |       | 15    |      |       | 18    | 387   | 0     |       | 23    | 202   | 0     |
| Queue Length 95th (ft)  | 204   | 75    |      |       | 59    |      |       | m25   | 516   | m0    |       | 47    | 281   | 16    |
| Internal Link Dist (ft) |       | 1275  |      |       | 788   |      |       |       | 465   |       |       |       | 1720  |       |
| Turn Bay Length (ft)    | 485   |       |      |       |       |      |       | 400   |       | 125   |       | 400   |       | 250   |
| Base Capacity (vph)     | 308   | 555   |      |       | 225   |      |       | 421   | 2025  | 970   |       | 259   | 2068  | 1216  |
| Starvation Cap Reductn  | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.66  | 0.24  |      |       | 0.29  |      |       | 0.23  | 0.71  | 0.01  |       | 0.37  | 0.43  | 0.08  |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 16 (13%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 17.5 Intersection LOS: B  
 Intersection Capacity Utilization 73.9% ICU Level of Service D  
 Analysis Period (min) 15  
 Description: 08-1090  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road



Herndon Farm  
2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road

Background PM  
07/14/2020



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBU   | NBL   | NBT   | NBR   | SBU   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)    | 123   | 30    | 49   | 16    | 9     | 25   | 4     | 149   | 1047  | 9     | 40    | 85    | 1481  | 168   |
| Future Volume (vph)     | 123   | 30    | 49   | 16    | 9     | 25   | 4     | 149   | 1047  | 9     | 40    | 85    | 1481  | 168   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    | 12   | 12    | 12    | 12   | 12    | 12    | 12    | 12    | 12    | 12    | 12    | 12    |
| Grade (%)               |       | -1%   |      |       | -5%   |      |       |       | 1%    |       |       |       |       | -2%   |
| Storage Length (ft)     | 485   |       | 0    | 0     |       | 0    |       | 400   |       | 125   |       | 400   |       | 250   |
| Storage Lanes           | 1     |       | 0    | 0     |       | 0    |       | 1     |       | 1     |       | 1     |       | 1     |
| Taper Length (ft)       | 100   |       |      | 100   |       |      |       | 100   |       |       |       | 100   |       |       |
| Satd. Flow (prot)       | 1778  | 1698  | 0    | 0     | 1595  | 0    | 0     | 1761  | 3522  | 1575  | 0     | 1787  | 3575  | 1599  |
| Flt Permitted           | 0.796 |       |      |       | 0.858 |      |       | 0.074 |       |       |       | 0.196 |       |       |
| Satd. Flow (perm)       | 1490  | 1698  | 0    | 0     | 1390  | 0    | 0     | 137   | 3522  | 1575  | 0     | 369   | 3575  | 1599  |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 52    |      |       | 26    |      |       |       |       | 152   |       |       |       | 177   |
| Link Speed (mph)        |       | 35    |      |       | 35    |      |       |       | 55    |       |       |       |       | 55    |
| Link Distance (ft)      |       | 1355  |      |       | 868   |      |       |       | 545   |       |       |       | 1800  |       |
| Travel Time (s)         |       | 26.4  |      |       | 16.9  |      |       |       | 6.8   |       |       |       | 22.3  |       |
| Confl. Peds. (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Confl. Bikes (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Peak Hour Factor        | 0.95  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  |
| Growth Factor           | 100%  | 100%  | 100% | 100%  | 100%  | 100% | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  |
| Heavy Vehicles (%)      | 2%    | 2%    | 2%   | 12%   | 12%   | 12%  | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Parking (#/hr)          |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Mid-Block Traffic (%)   |       | 0%    |      |       | 0%    |      |       |       | 0%    |       |       |       | 0%    |       |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)   | 129   | 84    | 0    | 0     | 52    | 0    | 0     | 161   | 1102  | 9     | 0     | 131   | 1559  | 177   |
| Turn Type               | D.P+P | NA    |      | Perm  | NA    |      | D.P+P | D.P+P | NA    | Perm  | D.P+P | D.P+P | NA    | pm+ov |
| Protected Phases        | 7     | 4     |      |       | 8     |      | 5     | 5     | 2     |       | 1     | 1     | 6     | 7     |
| Permitted Phases        | 8     |       |      | 8     |       |      | 6     | 6     |       | 2     | 2     | 2     |       | 6     |
| Detector Phase          | 7     | 4     |      | 8     | 8     |      | 5     | 5     | 2     | 2     | 1     | 1     | 6     | 7     |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   | 14.0  | 14.0  | 7.0   | 7.0   | 14.0  | 7.0   |
| Minimum Split (s)       | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 15.0  | 15.0  | 22.0  | 22.0  | 15.0  | 15.0  | 35.5  | 15.0  |
| Total Split (s)         | 15.0  | 35.0  |      | 20.0  | 20.0  |      | 20.0  | 20.0  | 65.0  | 65.0  | 20.0  | 20.0  | 65.0  | 15.0  |
| Total Split (%)         | 12.5% | 29.2% |      | 16.7% | 16.7% |      | 16.7% | 16.7% | 54.2% | 54.2% | 16.7% | 16.7% | 54.2% | 12.5% |
| Yellow Time (s)         | 3.0   | 3.9   |      | 4.2   | 4.2   |      | 3.0   | 3.0   | 5.4   | 5.4   | 3.0   | 3.0   | 5.4   | 3.0   |
| All-Red Time (s)        | 3.3   | 2.7   |      | 2.7   | 2.7   |      | 3.5   | 3.5   | 1.1   | 1.1   | 3.3   | 3.3   | 1.1   | 3.3   |
| Lost Time Adjust (s)    | -1.3  | -1.6  |      |       | -1.9  |      | -1.5  | -1.5  | -1.5  | -1.5  |       | -1.3  | -1.5  | -1.3  |
| Total Lost Time (s)     | 5.0   | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  |       |      | Lag   | Lag   |      | Lead  | Lead  | Lag   | Lag   | Lead  | Lead  | Lag   | Lead  |
| Lead-Lag Optimize?      | Yes   |       |      | Yes   | Yes   |      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | None  | C-Max | C-Max | None  | None  | C-Max | None  |
| Act Effct Green (s)     | 18.0  | 22.0  |      |       | 10.0  |      |       | 83.0  | 74.0  | 74.0  |       | 83.0  | 70.4  | 85.2  |
| Actuated g/C Ratio      | 0.15  | 0.18  |      |       | 0.08  |      |       | 0.69  | 0.62  | 0.62  |       | 0.69  | 0.59  | 0.71  |
| v/c Ratio               | 0.52  | 0.24  |      |       | 0.37  |      |       | 0.61  | 0.51  | 0.01  |       | 0.36  | 0.74  | 0.15  |
| Control Delay           | 49.8  | 19.1  |      |       | 38.1  |      |       | 31.7  | 10.1  | 0.0   |       | 8.5   | 22.9  | 1.5   |
| Queue Delay             | 0.0   | 0.0   |      |       | 0.0   |      |       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Delay             | 49.8  | 19.1  |      |       | 38.1  |      |       | 31.7  | 10.1  | 0.0   |       | 8.5   | 22.9  | 1.5   |
| LOS                     | D     | B     |      |       | D     |      |       | C     | B     | A     |       | A     | C     | A     |
| Approach Delay          |       | 37.7  |      |       | 38.1  |      |       |       | 12.8  |       |       |       |       | 19.9  |
| Approach LOS            |       | D     |      |       | D     |      |       |       | B     |       |       |       |       | B     |
| Queue Length 50th (ft)  | 87    | 20    |      |       | 19    |      |       | 58    | 187   | 0     |       | 27    | 458   | 0     |
| Queue Length 95th (ft)  | 141   | 62    |      |       | 59    |      |       | m128  | 216   | m0    |       | 53    | 657   | 26    |
| Internal Link Dist (ft) |       | 1275  |      |       | 788   |      |       |       | 465   |       |       |       | 1720  |       |
| Turn Bay Length (ft)    | 485   |       |      |       |       |      |       | 400   |       | 125   |       | 400   |       | 250   |
| Base Capacity (vph)     | 250   | 463   |      |       | 196   |      |       | 306   | 2171  | 1029  |       | 447   | 2096  | 1188  |
| Starvation Cap Reductn  | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.52  | 0.18  |      |       | 0.27  |      |       | 0.53  | 0.51  | 0.01  |       | 0.29  | 0.74  | 0.15  |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

|   |                        |
|---|------------------------|
| Offset: 12 (10%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green |                        |
| Natural Cycle: 85   |                        |
| Control Type: Actuated-Coordinated                                      |                        |
| Maximum v/c Ratio: 0.74   |                        |
| Intersection Signal Delay: 18.6   | Intersection LOS: B    |
| Intersection Capacity Utilization 75.4%                                 | ICU Level of Service D |
| Analysis Period (min) 15  |                        |
| Description: 08-1090  |                        |
| m Volume for 95th percentile queue is metered by upstream signal.       |                        |

Splits and Phases: 2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road





| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBU   | NBL   | NBT   | NBR   | SBU   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)    | 205   | 40    | 89   | 11    | 9     | 43   | 5     | 89    | 1412  | 12    | 66    | 70    | 901   | 103   |
| Future Volume (vph)     | 205   | 40    | 89   | 11    | 9     | 43   | 5     | 89    | 1412  | 12    | 66    | 70    | 901   | 103   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    | 12   | 12    | 12    | 12   | 12    | 12    | 12    | 12    | 12    | 12    | 12    | 12    |
| Grade (%)               |       | -1%   |      |       | -5%   |      |       |       | 1%    |       |       |       |       | -2%   |
| Storage Length (ft)     | 485   |       | 0    | 0     |       | 0    |       | 400   |       | 125   |       | 400   |       | 250   |
| Storage Lanes           | 1     |       | 0    | 0     |       | 0    |       | 1     |       | 1     |       | 1     |       | 1     |
| Taper Length (ft)       | 100   |       |      | 100   |       |      |       | 100   |       |       |       | 100   |       |       |
| Satd. Flow (prot)       | 1778  | 1679  | 0    | 0     | 1669  | 0    | 0     | 1761  | 3522  | 1575  | 0     | 1787  | 3575  | 1599  |
| Flt Permitted           | 0.687 |       |      |       | 0.910 |      |       | 0.239 |       |       |       | 0.080 |       |       |
| Satd. Flow (perm)       | 1286  | 1679  | 0    | 0     | 1531  | 0    | 0     | 443   | 3522  | 1575  | 0     | 151   | 3575  | 1599  |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 93    |      |       | 45    |      |       |       |       | 209   |       |       |       | 107   |
| Link Speed (mph)        |       | 35    |      |       | 35    |      |       |       | 55    |       |       |       |       | 55    |
| Link Distance (ft)      |       | 1355  |      |       | 783   |      |       |       | 1147  |       |       |       |       | 457   |
| Travel Time (s)         |       | 26.4  |      |       | 15.3  |      |       |       | 14.2  |       |       |       |       | 5.7   |
| Confl. Peds. (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Confl. Bikes (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Peak Hour Factor        | 0.96  | 0.96  | 0.96 | 0.96  | 0.96  | 0.96 | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  |
| Growth Factor           | 100%  | 100%  | 100% | 100%  | 100%  | 100% | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  |
| Heavy Vehicles (%)      | 2%    | 2%    | 2%   | 5%    | 5%    | 5%   | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Parking (#/hr)          |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Mid-Block Traffic (%)   |       | 0%    |      |       | 0%    |      |       |       | 0%    |       |       |       |       | 0%    |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)   | 214   | 135   | 0    | 0     | 65    | 0    | 0     | 98    | 1471  | 13    | 0     | 142   | 939   | 107   |
| Turn Type               | D.P+P | NA    |      | Perm  | NA    |      | D.P+P | D.P+P | NA    | Perm  | D.P+P | D.P+P | NA    | pm+ov |
| Protected Phases        | 7     | 4     |      |       | 8     |      | 5     | 5     | 2     |       | 1     | 1     | 6     | 7     |
| Permitted Phases        | 8     |       |      | 8     |       |      | 6     | 6     |       | 2     | 2     | 2     |       | 6     |
| Detector Phase          | 7     | 4     |      | 8     | 8     |      | 5     | 5     | 2     | 2     | 1     | 1     | 6     | 7     |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   | 14.0  | 14.0  | 7.0   | 7.0   | 14.0  | 7.0   |
| Minimum Split (s)       | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 15.0  | 15.0  | 22.0  | 22.0  | 15.0  | 15.0  | 35.5  | 15.0  |
| Total Split (s)         | 20.0  | 40.0  |      | 20.0  | 20.0  |      | 15.0  | 15.0  | 55.0  | 55.0  | 25.0  | 25.0  | 65.0  | 20.0  |
| Total Split (%)         | 16.7% | 33.3% |      | 16.7% | 16.7% |      | 12.5% | 12.5% | 45.8% | 45.8% | 20.8% | 20.8% | 54.2% | 16.7% |
| Yellow Time (s)         | 3.0   | 3.9   |      | 4.2   | 4.2   |      | 3.0   | 3.0   | 5.4   | 5.4   | 3.0   | 3.0   | 5.4   | 3.0   |
| All-Red Time (s)        | 3.3   | 2.7   |      | 2.7   | 2.7   |      | 3.5   | 3.5   | 1.1   | 1.1   | 3.3   | 3.3   | 1.1   | 3.3   |
| Lost Time Adjust (s)    | -1.3  | -1.6  |      |       | -1.9  |      | -1.5  | -1.5  | -1.5  | -1.5  |       | -1.3  | -1.5  | -1.3  |
| Total Lost Time (s)     | 5.0   | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  |       |      | Lag   | Lag   |      | Lead  | Lead  | Lag   | Lag   | Lead  | Lead  | Lag   | Lead  |
| Lead-Lag Optimize?      | Yes   |       |      | Yes   | Yes   |      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | None  | C-Max | C-Max | None  | None  | C-Max | None  |
| Act Effct Green (s)     | 22.6  | 26.6  |      |       | 9.7   |      |       | 78.4  | 66.9  | 66.9  |       | 78.4  | 69.4  | 89.1  |
| Actuated g/C Ratio      | 0.19  | 0.22  |      |       | 0.08  |      |       | 0.65  | 0.56  | 0.56  |       | 0.65  | 0.58  | 0.74  |
| v/c Ratio               | 0.71  | 0.30  |      |       | 0.39  |      |       | 0.25  | 0.75  | 0.01  |       | 0.56  | 0.45  | 0.09  |
| Control Delay           | 54.0  | 14.8  |      |       | 29.0  |      |       | 8.7   | 25.2  | 0.0   |       | 23.9  | 16.3  | 1.3   |
| Queue Delay             | 0.0   | 0.0   |      |       | 0.0   |      |       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Delay             | 54.0  | 14.8  |      |       | 29.0  |      |       | 8.7   | 25.2  | 0.0   |       | 23.9  | 16.3  | 1.3   |
| LOS                     | D     | B     |      |       | C     |      |       | A     | C     | A     |       | C     | B     | A     |
| Approach Delay          |       | 38.8  |      |       | 29.0  |      |       |       | 24.0  |       |       |       |       | 15.9  |
| Approach LOS            |       | D     |      |       | C     |      |       |       | C     |       |       |       |       | B     |
| Queue Length 50th (ft)  | 144   | 25    |      |       | 15    |      |       | 24    | 451   | 0     |       | 36    | 216   | 0     |
| Queue Length 95th (ft)  | 214   | 76    |      |       | 59    |      |       | 47    | 644   | 0     |       | 106   | 297   | 17    |
| Internal Link Dist (ft) |       | 1275  |      |       | 703   |      |       |       | 1067  |       |       |       |       | 377   |
| Turn Bay Length (ft)    | 485   |       |      |       |       |      |       | 400   |       | 125   |       | 400   |       | 250   |
| Base Capacity (vph)     | 307   | 555   |      |       | 230   |      |       | 404   | 1962  | 970   |       | 377   | 2068  | 1218  |
| Starvation Cap Reductn  | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.70  | 0.24  |      |       | 0.28  |      |       | 0.24  | 0.75  | 0.01  |       | 0.38  | 0.45  | 0.09  |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120



Offset: 16 (13%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 22.7 Intersection LOS: C  
 Intersection Capacity Utilization 77.1% ICU Level of Service D  
 Analysis Period (min) 15  
 Description: 08-1090

Splits and Phases: 2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road





| Lane Group              | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Configurations     |      | ↖    | ↕    | ↗    |      | ↖    |
| Traffic Volume (vph)    | 0    | 83   | 1660 | 70   | 0    | 1140 |
| Future Volume (vph)     | 0    | 83   | 1660 | 70   | 0    | 1140 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft)         | 12   | 12   | 12   | 12   | 12   | 12   |
| Grade (%)               | 0%   |      | 0%   |      |      | -2%  |
| Storage Length (ft)     | 0    | 0    |      | 100  | 0    |      |
| Storage Lanes           | 0    | 1    |      | 1    | 0    |      |
| Taper Length (ft)       | 100  |      |      |      | 100  |      |
| Satd. Flow (prot)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Flt Permitted           |      |      |      |      |      |      |
| Satd. Flow (perm)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Link Speed (mph)        | 25   |      | 55   |      |      | 55   |
| Link Distance (ft)      | 525  |      | 457  |      |      | 1278 |
| Travel Time (s)         | 14.3 |      | 5.7  |      |      | 15.8 |
| Confl. Peds. (#/hr)     |      |      |      |      |      |      |
| Confl. Bikes (#/hr)     |      |      |      |      |      |      |
| Peak Hour Factor        | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Growth Factor           | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%   | 2%   | 2%   | 2%   |
| Bus Blockages (#/hr)    | 0    | 0    | 0    | 0    | 0    | 0    |
| Parking (#/hr)          |      |      |      |      |      |      |
| Mid-Block Traffic (%)   | 0%   |      | 0%   |      |      | 0%   |
| Shared Lane Traffic (%) |      |      |      |      |      |      |
| Lane Group Flow (vph)   | 0    | 92   | 1844 | 78   | 0    | 1267 |
| Sign Control            | Stop |      | Free |      |      | Free |

**Intersection Summary**

|                                   |              |
|-----------------------------------|--------------|
| Area Type:                        | Other        |
| Control Type:                     | Unsignalized |
| Intersection Capacity Utilization | 57.7%        |
| ICU Level of Service              | B            |
| Analysis Period (min)             | 15           |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.7  |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↗    | ↕    | ↗    |      | ↕    |
| Traffic Vol, veh/h       | 0    | 83   | 1660 | 70   | 0    | 1140 |
| Future Vol, veh/h        | 0    | 83   | 1660 | 70   | 0    | 1140 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 100  | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -2   |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 92   | 1844 | 78   | 0    | 1267 |

| Major/Minor          | Minor1 | Major1 | Major2 | Major2 | Major2 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | -      | 922    | 0      | 0      | -      |
| Stage 1              | -      | -      | -      | -      | -      |
| Stage 2              | -      | -      | -      | -      | -      |
| Critical Hdwy        | -      | 6.94   | -      | -      | -      |
| Critical Hdwy Stg 1  | -      | -      | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      | -      | -      |
| Follow-up Hdwy       | -      | 3.32   | -      | -      | -      |
| Pot Cap-1 Maneuver   | 0      | 272    | -      | 0      | -      |
| Stage 1              | 0      | -      | -      | 0      | -      |
| Stage 2              | 0      | -      | -      | 0      | -      |
| Platoon blocked, %   |        |        | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | 272    | -      | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      | -      | -      |
| Stage 1              | -      | -      | -      | -      | -      |
| Stage 2              | -      | -      | -      | -      | -      |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 24.9 | 0  | 0  |
| HCM LOS              | C    |    |    |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|-----------------------|-----|-----|-------|-----|
| Capacity (veh/h)      | -   | -   | 272   | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.339 | -   |
| HCM Control Delay (s) | -   | -   | 24.9  | -   |
| HCM Lane LOS          | -   | -   | C     | -   |
| HCM 95th %tile Q(veh) | -   | -   | 1.4   | -   |



| Lane Group              | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Configurations     |      | ↗    | ↕    | ↘    |      | ↕    |
| Traffic Volume (vph)    | 0    | 21   | 1725 | 18   | 0    | 1140 |
| Future Volume (vph)     | 0    | 21   | 1725 | 18   | 0    | 1140 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft)         | 12   | 12   | 12   | 12   | 12   | 12   |
| Grade (%)               | 0%   |      | 0%   |      |      | -2%  |
| Storage Length (ft)     | 0    | 0    |      | 100  | 0    |      |
| Storage Lanes           | 0    | 1    |      | 1    | 0    |      |
| Taper Length (ft)       | 100  |      |      |      | 100  |      |
| Satd. Flow (prot)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Flt Permitted           |      |      |      |      |      |      |
| Satd. Flow (perm)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Link Speed (mph)        | 25   |      | 55   |      |      | 55   |
| Link Distance (ft)      | 490  |      | 1278 |      |      | 1027 |
| Travel Time (s)         | 13.4 |      | 15.8 |      |      | 12.7 |
| Confl. Peds. (#/hr)     |      |      |      |      |      |      |
| Confl. Bikes (#/hr)     |      |      |      |      |      |      |
| Peak Hour Factor        | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Growth Factor           | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%   | 2%   | 2%   | 2%   |
| Bus Blockages (#/hr)    | 0    | 0    | 0    | 0    | 0    | 0    |
| Parking (#/hr)          |      |      |      |      |      |      |
| Mid-Block Traffic (%)   | 0%   |      | 0%   |      |      | 0%   |
| Shared Lane Traffic (%) |      |      |      |      |      |      |
| Lane Group Flow (vph)   | 0    | 23   | 1917 | 20   | 0    | 1267 |
| Sign Control            | Stop |      | Free |      |      | Free |

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 57.7% ICU Level of Service B

Analysis Period (min) 15

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.1  |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↗    | ↕    | ↗    |      | ↕    |
| Traffic Vol, veh/h       | 0    | 21   | 1725 | 18   | 0    | 1140 |
| Future Vol, veh/h        | 0    | 21   | 1725 | 18   | 0    | 1140 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 100  | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -2   |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 23   | 1917 | 20   | 0    | 1267 |

| Major/Minor          | Minor1 | Major1 | Major2 |   |   |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | -      | 959    | 0      | 0 | - |
| Stage 1              | -      | -      | -      | - | - |
| Stage 2              | -      | -      | -      | - | - |
| Critical Hdwy        | -      | 6.94   | -      | - | - |
| Critical Hdwy Stg 1  | -      | -      | -      | - | - |
| Critical Hdwy Stg 2  | -      | -      | -      | - | - |
| Follow-up Hdwy       | -      | 3.32   | -      | - | - |
| Pot Cap-1 Maneuver   | 0      | 257    | -      | 0 | - |
| Stage 1              | 0      | -      | -      | 0 | - |
| Stage 2              | 0      | -      | -      | 0 | - |
| Platoon blocked, %   |        |        | -      | - | - |
| Mov Cap-1 Maneuver   | -      | 257    | -      | - | - |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | - |
| Stage 1              | -      | -      | -      | - | - |
| Stage 2              | -      | -      | -      | - | - |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 20.4 | 0  | 0  |
| HCM LOS              | C    |    |    |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|-----------------------|-----|-----|-------|-----|
| Capacity (veh/h)      | -   | -   | 257   | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.091 | -   |
| HCM Control Delay (s) | -   | -   | 20.4  | -   |
| HCM Lane LOS          | -   | -   | C     | -   |
| HCM 95th %tile Q(veh) | -   | -   | 0.3   | -   |



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBU   | NBL   | NBT   | NBR   | SBU   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)    | 134   | 30    | 49   | 16    | 9     | 25   | 4     | 149   | 1091  | 9     | 96    | 85    | 1520  | 178   |
| Future Volume (vph)     | 134   | 30    | 49   | 16    | 9     | 25   | 4     | 149   | 1091  | 9     | 96    | 85    | 1520  | 178   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    | 12   | 12    | 12    | 12   | 12    | 12    | 12    | 12    | 12    | 12    | 12    | 12    |
| Grade (%)               |       | -1%   |      |       | -5%   |      |       |       | 1%    |       |       |       |       | -2%   |
| Storage Length (ft)     | 485   |       | 0    | 0     |       | 0    |       | 400   |       | 125   |       | 400   |       | 250   |
| Storage Lanes           | 1     |       | 0    | 0     |       | 0    |       | 1     |       | 1     |       | 1     |       | 1     |
| Taper Length (ft)       | 100   |       |      | 100   |       |      |       | 100   |       |       |       | 100   |       |       |
| Satd. Flow (prot)       | 1778  | 1698  | 0    | 0     | 1595  | 0    | 0     | 1761  | 3522  | 1575  | 0     | 1787  | 3575  | 1599  |
| Flt Permitted           | 0.800 |       |      |       | 0.858 |      |       | 0.069 |       |       |       | 0.179 |       |       |
| Satd. Flow (perm)       | 1498  | 1698  | 0    | 0     | 1390  | 0    | 0     | 128   | 3522  | 1575  | 0     | 337   | 3575  | 1599  |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       |       | Yes   |       |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 52    |      |       | 26    |      |       |       |       | 152   |       |       |       | 187   |
| Link Speed (mph)        |       | 35    |      |       | 35    |      |       |       | 55    |       |       |       |       | 55    |
| Link Distance (ft)      |       | 1355  |      |       | 783   |      |       |       | 1147  |       |       |       |       | 457   |
| Travel Time (s)         |       | 26.4  |      |       | 15.3  |      |       |       | 14.2  |       |       |       |       | 5.7   |
| Confl. Peds. (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Confl. Bikes (#/hr)     |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Peak Hour Factor        | 0.95  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  |
| Growth Factor           | 100%  | 100%  | 100% | 100%  | 100%  | 100% | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  |
| Heavy Vehicles (%)      | 2%    | 2%    | 2%   | 12%   | 12%   | 12%  | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    | 2%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Parking (#/hr)          |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Mid-Block Traffic (%)   |       | 0%    |      |       | 0%    |      |       |       | 0%    |       |       |       |       | 0%    |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)   | 141   | 84    | 0    | 0     | 52    | 0    | 0     | 161   | 1148  | 9     | 0     | 190   | 1600  | 187   |
| Turn Type               | D.P+P | NA    |      | Perm  | NA    |      | D.P+P | D.P+P | NA    | Perm  | D.P+P | D.P+P | NA    | pm+ov |
| Protected Phases        | 7     | 4     |      |       | 8     |      | 5     | 5     | 2     |       | 1     | 1     | 6     | 7     |
| Permitted Phases        | 8     |       |      | 8     |       |      | 6     | 6     |       | 2     | 2     | 2     |       | 6     |
| Detector Phase          | 7     | 4     |      | 8     | 8     |      | 5     | 5     | 2     | 2     | 1     | 1     | 6     | 7     |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 7.0   | 7.0   |      | 7.0   | 7.0   |      | 7.0   | 7.0   | 14.0  | 14.0  | 7.0   | 7.0   | 14.0  | 7.0   |
| Minimum Split (s)       | 15.0  | 15.0  |      | 15.0  | 15.0  |      | 15.0  | 15.0  | 22.0  | 22.0  | 15.0  | 15.0  | 35.5  | 15.0  |
| Total Split (s)         | 15.0  | 30.0  |      | 15.0  | 15.0  |      | 20.0  | 20.0  | 65.0  | 65.0  | 25.0  | 25.0  | 70.0  | 15.0  |
| Total Split (%)         | 12.5% | 25.0% |      | 12.5% | 12.5% |      | 16.7% | 16.7% | 54.2% | 54.2% | 20.8% | 20.8% | 58.3% | 12.5% |
| Yellow Time (s)         | 3.0   | 3.9   |      | 4.2   | 4.2   |      | 3.0   | 3.0   | 5.4   | 5.4   | 3.0   | 3.0   | 5.4   | 3.0   |
| All-Red Time (s)        | 3.3   | 2.7   |      | 2.7   | 2.7   |      | 3.5   | 3.5   | 1.1   | 1.1   | 3.3   | 3.3   | 1.1   | 3.3   |
| Lost Time Adjust (s)    | -1.3  | -1.6  |      |       | -1.9  |      | -1.5  | -1.5  | -1.5  | -1.5  |       | -1.3  | -1.5  | -1.3  |
| Total Lost Time (s)     | 5.0   | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0   | 5.0   |       | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  |       |      | Lag   | Lag   |      | Lead  | Lead  | Lag   | Lag   | Lead  | Lead  | Lag   | Lead  |
| Lead-Lag Optimize?      | Yes   |       |      | Yes   | Yes   |      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | None  | C-Max | C-Max | None  | None  | C-Max | None  |
| Act Effct Green (s)     | 17.5  | 21.5  |      |       | 9.3   |      |       | 83.5  | 72.5  | 72.5  |       | 83.5  | 71.3  | 86.2  |
| Actuated g/C Ratio      | 0.15  | 0.18  |      |       | 0.08  |      |       | 0.70  | 0.60  | 0.60  |       | 0.70  | 0.59  | 0.72  |
| v/c Ratio               | 0.59  | 0.24  |      |       | 0.39  |      |       | 0.63  | 0.54  | 0.01  |       | 0.52  | 0.75  | 0.16  |
| Control Delay           | 53.4  | 19.7  |      |       | 40.1  |      |       | 32.1  | 16.3  | 0.0   |       | 10.8  | 22.3  | 1.3   |
| Queue Delay             | 0.0   | 0.0   |      |       | 0.0   |      |       | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Delay             | 53.4  | 19.7  |      |       | 40.1  |      |       | 32.1  | 16.3  | 0.0   |       | 10.8  | 22.3  | 1.3   |
| LOS                     | D     | B     |      |       | D     |      |       | C     | B     | A     |       | B     | C     | A     |
| Approach Delay          |       | 40.8  |      |       | 40.1  |      |       |       | 18.1  |       |       |       |       | 19.2  |
| Approach LOS            |       | D     |      |       | D     |      |       |       | B     |       |       |       |       | B     |
| Queue Length 50th (ft)  | 96    | 20    |      |       | 19    |      |       | 58    | 266   | 0     |       | 41    | 481   | 0     |
| Queue Length 95th (ft)  | 158   | 64    |      |       | 61    |      |       | 131   | 378   | 0     |       | 68    | 623   | 23    |
| Internal Link Dist (ft) |       | 1275  |      |       | 703   |      |       |       | 1067  |       |       |       |       | 377   |
| Turn Bay Length (ft)    | 485   |       |      |       |       |      |       | 400   |       | 125   |       | 400   |       | 250   |
| Base Capacity (vph)     | 242   | 394   |      |       | 139   |      |       | 295   | 2129  | 1012  |       | 489   | 2124  | 1202  |
| Starvation Cap Reductn  | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |      |       | 0     |      |       | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.58  | 0.21  |      |       | 0.37  |      |       | 0.55  | 0.54  | 0.01  |       | 0.39  | 0.75  | 0.16  |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 16 (13%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 20.5 Intersection LOS: C  
 Intersection Capacity Utilization 77.1% ICU Level of Service D  
 Analysis Period (min) 15  
 Description: 08-1090

Splits and Phases: 2: U.S. 15-501 & Briar Chapel Parkway/Vickers Road





| Lane Group              | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Configurations     |      | ↖    | ↕    | ↗    |      | ↘    |
| Traffic Volume (vph)    | 0    | 78   | 1260 | 89   | 0    | 1883 |
| Future Volume (vph)     | 0    | 78   | 1260 | 89   | 0    | 1883 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft)         | 12   | 12   | 12   | 12   | 12   | 12   |
| Grade (%)               | 0%   |      | 0%   |      |      | -2%  |
| Storage Length (ft)     | 0    | 0    |      | 100  | 0    |      |
| Storage Lanes           | 0    | 1    |      | 1    | 0    |      |
| Taper Length (ft)       | 100  |      |      |      | 100  |      |
| Satd. Flow (prot)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Flt Permitted           |      |      |      |      |      |      |
| Satd. Flow (perm)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Link Speed (mph)        | 25   |      | 55   |      |      | 55   |
| Link Distance (ft)      | 525  |      | 457  |      |      | 1278 |
| Travel Time (s)         | 14.3 |      | 5.7  |      |      | 15.8 |
| Confl. Peds. (#/hr)     |      |      |      |      |      |      |
| Confl. Bikes (#/hr)     |      |      |      |      |      |      |
| Peak Hour Factor        | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Growth Factor           | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%   | 2%   | 2%   | 2%   |
| Bus Blockages (#/hr)    | 0    | 0    | 0    | 0    | 0    | 0    |
| Parking (#/hr)          |      |      |      |      |      |      |
| Mid-Block Traffic (%)   | 0%   |      | 0%   |      |      | 0%   |
| Shared Lane Traffic (%) |      |      |      |      |      |      |
| Lane Group Flow (vph)   | 0    | 87   | 1400 | 99   | 0    | 2092 |
| Sign Control            | Stop |      | Free |      |      | Free |

**Intersection Summary**

|                                   |              |
|-----------------------------------|--------------|
| Area Type:                        | Other        |
| Control Type:                     | Unsignalized |
| Intersection Capacity Utilization | 55.4%        |
| ICU Level of Service              | B            |
| Analysis Period (min)             | 15           |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.4  |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↑    | ↑↑   | ↑    |      | ↑↑   |
| Traffic Vol, veh/h       | 0    | 78   | 1260 | 89   | 0    | 1883 |
| Future Vol, veh/h        | 0    | 78   | 1260 | 89   | 0    | 1883 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 100  | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -2   |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 87   | 1400 | 99   | 0    | 2092 |

| Major/Minor          | Minor1 | Major1 | Major2 | Major2 | Major2 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | -      | 700    | 0      | 0      | -      |
| Stage 1              | -      | -      | -      | -      | -      |
| Stage 2              | -      | -      | -      | -      | -      |
| Critical Hdwy        | -      | 6.94   | -      | -      | -      |
| Critical Hdwy Stg 1  | -      | -      | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      | -      | -      |
| Follow-up Hdwy       | -      | 3.32   | -      | -      | -      |
| Pot Cap-1 Maneuver   | 0      | 382    | -      | 0      | -      |
| Stage 1              | 0      | -      | -      | 0      | -      |
| Stage 2              | 0      | -      | -      | 0      | -      |
| Platoon blocked, %   |        |        | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | 382    | -      | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      | -      | -      |
| Stage 1              | -      | -      | -      | -      | -      |
| Stage 2              | -      | -      | -      | -      | -      |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 17.2 | 0  | 0  |
| HCM LOS              | C    |    |    |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|-----------------------|-----|-----|-------|-----|
| Capacity (veh/h)      | -   | -   | 382   | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.227 | -   |
| HCM Control Delay (s) | -   | -   | 17.2  | -   |
| HCM Lane LOS          | -   | -   | C     | -   |
| HCM 95th %tile Q(veh) | -   | -   | 0.9   | -   |



| Lane Group              | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|-------------------------|------|------|------|------|------|------|
| Lane Configurations     |      | ↗    | ↕    | ↘    |      | ↗    |
| Traffic Volume (vph)    | 0    | 20   | 1316 | 22   | 0    | 1883 |
| Future Volume (vph)     | 0    | 20   | 1316 | 22   | 0    | 1883 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft)         | 12   | 12   | 12   | 12   | 12   | 12   |
| Grade (%)               | 0%   |      | 0%   |      |      | -2%  |
| Storage Length (ft)     | 0    | 0    |      | 100  | 0    |      |
| Storage Lanes           | 0    | 1    |      | 1    | 0    |      |
| Taper Length (ft)       | 100  |      |      |      | 100  |      |
| Satd. Flow (prot)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Flt Permitted           |      |      |      |      |      |      |
| Satd. Flow (perm)       | 0    | 1611 | 3539 | 1583 | 0    | 3575 |
| Link Speed (mph)        | 25   |      | 55   |      |      | 55   |
| Link Distance (ft)      | 490  |      | 1278 |      |      | 1027 |
| Travel Time (s)         | 13.4 |      | 15.8 |      |      | 12.7 |
| Confl. Peds. (#/hr)     |      |      |      |      |      |      |
| Confl. Bikes (#/hr)     |      |      |      |      |      |      |
| Peak Hour Factor        | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Growth Factor           | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%   | 2%   | 2%   | 2%   |
| Bus Blockages (#/hr)    | 0    | 0    | 0    | 0    | 0    | 0    |
| Parking (#/hr)          |      |      |      |      |      |      |
| Mid-Block Traffic (%)   | 0%   |      | 0%   |      |      | 0%   |
| Shared Lane Traffic (%) |      |      |      |      |      |      |
| Lane Group Flow (vph)   | 0    | 22   | 1462 | 24   | 0    | 2092 |
| Sign Control            | Stop |      | Free |      |      | Free |

**Intersection Summary**

|                                   |              |
|-----------------------------------|--------------|
| Area Type:                        | Other        |
| Control Type:                     | Unsignalized |
| Intersection Capacity Utilization | 55.4%        |
| ICU Level of Service              | B            |
| Analysis Period (min)             | 15           |

| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.1  |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
| Lane Configurations      |      | ↑    | ↑↑   | ↑    |      | ↑↑   |
| Traffic Vol, veh/h       | 0    | 20   | 1316 | 22   | 0    | 1883 |
| Future Vol, veh/h        | 0    | 20   | 1316 | 22   | 0    | 1883 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 100  | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -2   |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 22   | 1462 | 24   | 0    | 2092 |

| Major/Minor          | Minor1 | Major1 | Major2 |   |   |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | -      | 731    | 0      | 0 | - |
| Stage 1              | -      | -      | -      | - | - |
| Stage 2              | -      | -      | -      | - | - |
| Critical Hdwy        | -      | 6.94   | -      | - | - |
| Critical Hdwy Stg 1  | -      | -      | -      | - | - |
| Critical Hdwy Stg 2  | -      | -      | -      | - | - |
| Follow-up Hdwy       | -      | 3.32   | -      | - | - |
| Pot Cap-1 Maneuver   | 0      | 364    | -      | 0 | - |
| Stage 1              | 0      | -      | -      | 0 | - |
| Stage 2              | 0      | -      | -      | 0 | - |
| Platoon blocked, %   |        |        | -      | - | - |
| Mov Cap-1 Maneuver   | -      | 364    | -      | - | - |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | - |
| Stage 1              | -      | -      | -      | - | - |
| Stage 2              | -      | -      | -      | - | - |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 15.5 | 0  | 0  |
| HCM LOS              | C    |    |    |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|-----------------------|-----|-----|-------|-----|
| Capacity (veh/h)      | -   | -   | 364   | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.061 | -   |
| HCM Control Delay (s) | -   | -   | 15.5  | -   |
| HCM Lane LOS          | -   | -   | C     | -   |
| HCM 95th %tile Q(veh) | -   | -   | 0.2   | -   |